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The quality of online health information on breast augmentation

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Women spend years researching breast enlargement prior to deciding, and the majority use the Internet to begin their search. Walden et al. showed the biggest influence on a patient's decision to undergo breast augmentation was her plastic surgeon's website, second only to her own desire to change her appearance. The same study also shows the internet is the primary source of information on complications for patients¹. It is crucial that online information provided is accurate, up-to-date and understandable to allow patients to make an informed decision. Our study aimed to identify the quality of health information available on the Internet on breast enlargement.

Using an approach we described previously², we analysed 200 websites returned by Google.com on "breast enlargement". The raw data containing the list of websites analyzed and how they were annotated in provided in the Supplementary Online Material. Of these, 74% were from cosmetic surgery providers (CP) offering information on breast augmentation, followed by price comparison websites (6%) and news providers (6%). Non-surgical interventions including supplements and devices were the least represented interventions, predominantly advertised by shops selling these products (3%). CPs were equally well represented in the top-10 websites (70%), which included the only government website (www.nhs.co.uk) identified.

These websites were assessed according to standard health information quality (HIQ) parameters including the JAMA score, defined by the disclosure of source references, website authorship, ownership and date of update. A JAMA score of ≥ 3 is considered to be good quality³. As shown in Fig.1A, the JAMA score of CP websites was significantly lower than that of health portals (HP, e.g. webmd.com), news (N; e.g.

theguardian.com), non-profit (NP; e.g. cancerresearchuk.org) or scientific journals (SJ). The JAMA score of price comparison sites (CS, e.g. treatmentabroad.com), legal (L; e.g. cosmeticsurgerysolicitors.co.uk) or shops (e.g. ebay.co.uk) were not significantly different from that of CP sites.

When compared with “gold standard” government and professional (G/P) websites (n=4; bapras.org.uk, nhs.uk, baaps.org.uk, bupa.co.uk), the JAMA score of CP sites (n=127) was significantly lower (CP, 1, [1, 3], G/P, 2.5, [1.25, 3.75], $P < 0.001$ by Mann-Whitney U test). Most CP sites (87%) had a JAMA score of 1, with only 2% reaching the minimum of 3 and none 4, while 40% of websites from other typologies scored ≥ 3 (Fig.1B).

Website readability was also assessed using reading grade. To be understood by the 75% of the population, readability should be 6th grade level². The median reading grade of websites was 9.0 [IQR 9, 10], with only one website with a reading grade 6 (Fig.1C). For the purpose of comparison, the government website had a reading grade of 6.1 (<https://nhs.uk/Conditions/cosmetic-treatments-guide/Pages/breast-enlargement.aspx>).

Breast augmentation is associated with risks and benefits which should be both clearly outlined to the patients to enable them to make an informed decision/according to GMC guidelines. To analyse website content, we defined two categories of HIQ criteria specific to breast augmentation:

- 1) “General Quality Criteria”, based on the presence of the following procedural information (each counted as 1 point towards the total, for a maximum score of 10): incision site, implant placement, the type anaesthetic used, implant material, post-operative symptoms, post-operative limitation to exercise, requirement to wear sports bra, limitations to outcome, implant longevity, cost.
- 2) “Complication Quality Criteria”, based on the presence of information on the following complications (each counted as 1 point towards the total, for a maximum score of 8): infection, haematoma, capsular contraction, implant rupture/deflation, unsatisfactory appearance, breast implant-associated anaplastic lymphoma, need for reoperation or revision surgery, other general complications.

The median General Quality Criteria for CP websites was 5, IQR[3,6] (Fig.2A). The most frequently mentioned aspects of this criteria included the anaesthetic used (73%), the location and size of incision (66%) and the method of implant placement (64%), whilst the least frequently mentioned aspects were procedural cost (25%), the longevity of effects (24%) and potential limitations to the outcome (18%).

The median Complication Quality Criteria score was 1, IQR [0,5], as most websites only mention 1 complication (Fig.2B). Capsular contracture was the most frequently mentioned complication (45%), followed by infection risk (42%) and implant rupture/deflation (35%). The least frequently mentioned were the potential need for revision surgery/reoperation (28%) and risk of breast implant associated anaplastic lymphoma (11%).

Our study highlights the relatively low quality of online information on breast augmentation. Cosmetic surgery providers should be aware of the influence the Internet has on patient decision-making, and more importantly that of their own website. The use of appropriate Internet sources can be used to support and reinforce consultations, leading to better informed patients with higher post-operative satisfaction^{4,5}. These websites should provide comprehensive, accurate, up-to-date and understandable information on breast augmentation and the associated risks and benefits. We developed quality criteria encompassing important information to be included, and suggest adopting guidelines for plastic surgeons' websites to minimize complaints and litigation, and ensure high-quality and ethically-transparent information.

References

1. Walden JL, Panagopoulous G, Shrader SW. Contemporary decision making and perception in patients undergoing cosmetic breast augmentation. *Aesthet Surg J*. 2010 Jun;30(3):395–403.
2. Arif N, Ghezzi P. Quality of online information on breast cancer treatment options. *Breast*. 2018 Feb;37:6–12.

3. Silberg WM, Lundberg GD, Musacchio RA. Assessing, controlling, and assuring the quality of medical information on the Internet: Caveant lector et viewor--Let the reader and viewer beware. JAMA. 1997 Apr 16;277(15):1244–5.
4. Klassen AF, Pusic AL, Scott A, Klok J, Cano SJ. Satisfaction and quality of life in women who undergo breast surgery: A qualitative study. BMC Women's Health. 2009 Dec;9(1):11.
5. Paik AM, Mady LJ, Sood A, Eloy JA, Lee ES. A look inside the courtroom: an analysis of 292 cosmetic breast surgery medical malpractice cases. Aesthetic surgery journal. 2014 Jan 1;34(1):79-86.

FIGURE LEGENDS

Fig.1. A. JAMA score in different typologies of website (median, interquartile range, IQR, min, max). ** $p < .01$, **** $p < .0001$ vs CP by two-tailed Kruskal-Wallis test followed by Dunn's test. **B.** JAMA score distribution of CP ($n=127$) and other typologies ($n=45$). ** $p < .01$, **** $p < .0001$ by two-tailed Fisher test with Bonferroni-adjusted alpha levels of .01 (.05/5). **C.** Readability of CP websites ($n = 120$).

Fig.2. General (A) and complications (B) quality quality criteria scores of cosmetic surgery provider websites ($n = 127$).

